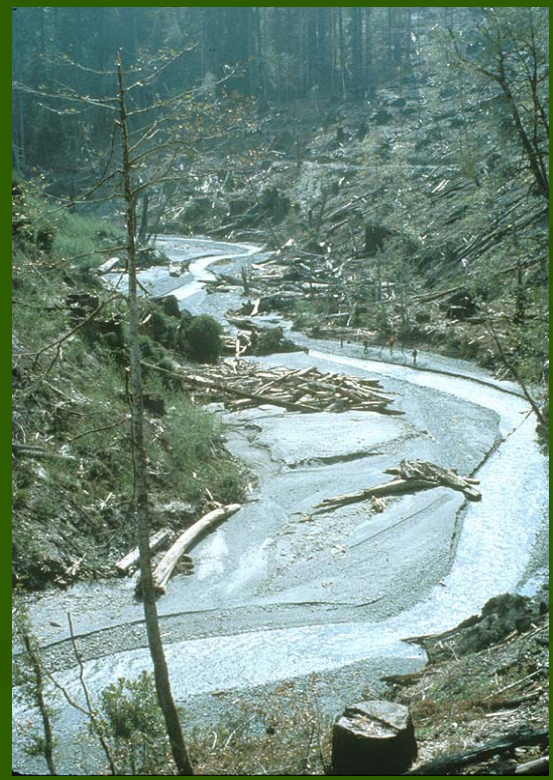
Are we there yet?

A 25 year journey of
restoration and monitoring
in the Redwood Creek Watershed

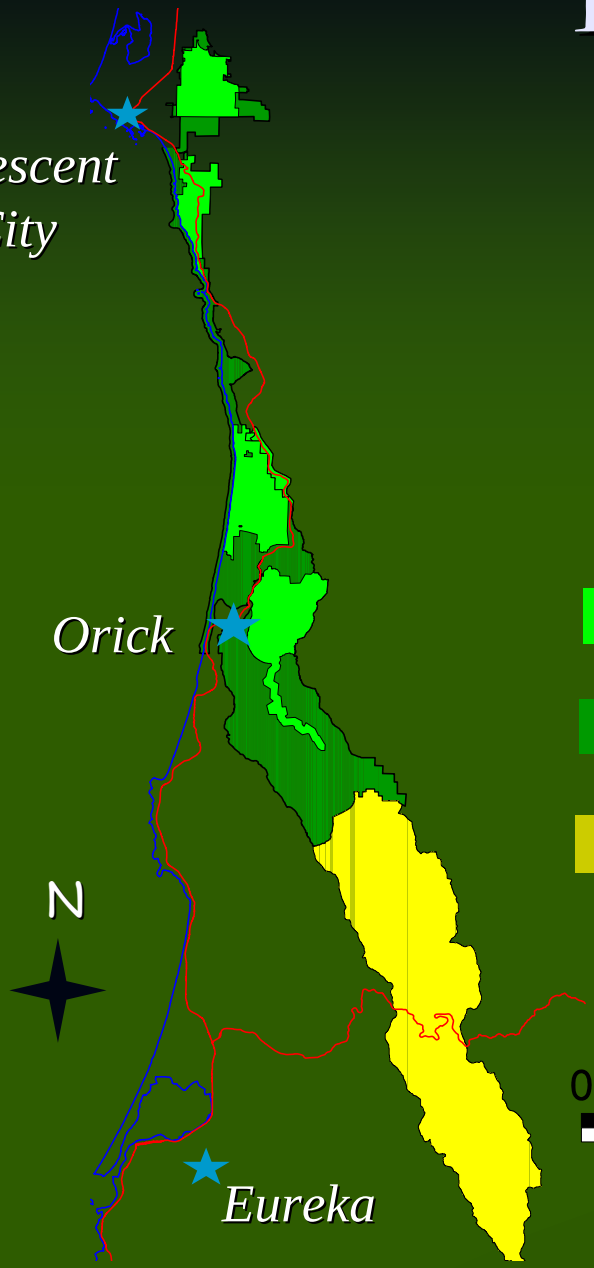


Purpose

- **Describe the Watershed Restoration Journey**
  - Watershed Assessment
  - Goals, Objectives
  - Implementation
  - Measure effectiveness (monitoring)
  - Lessons learned and next steps

Overview of Redwood Creek Watershed

Redwood National and State Parks

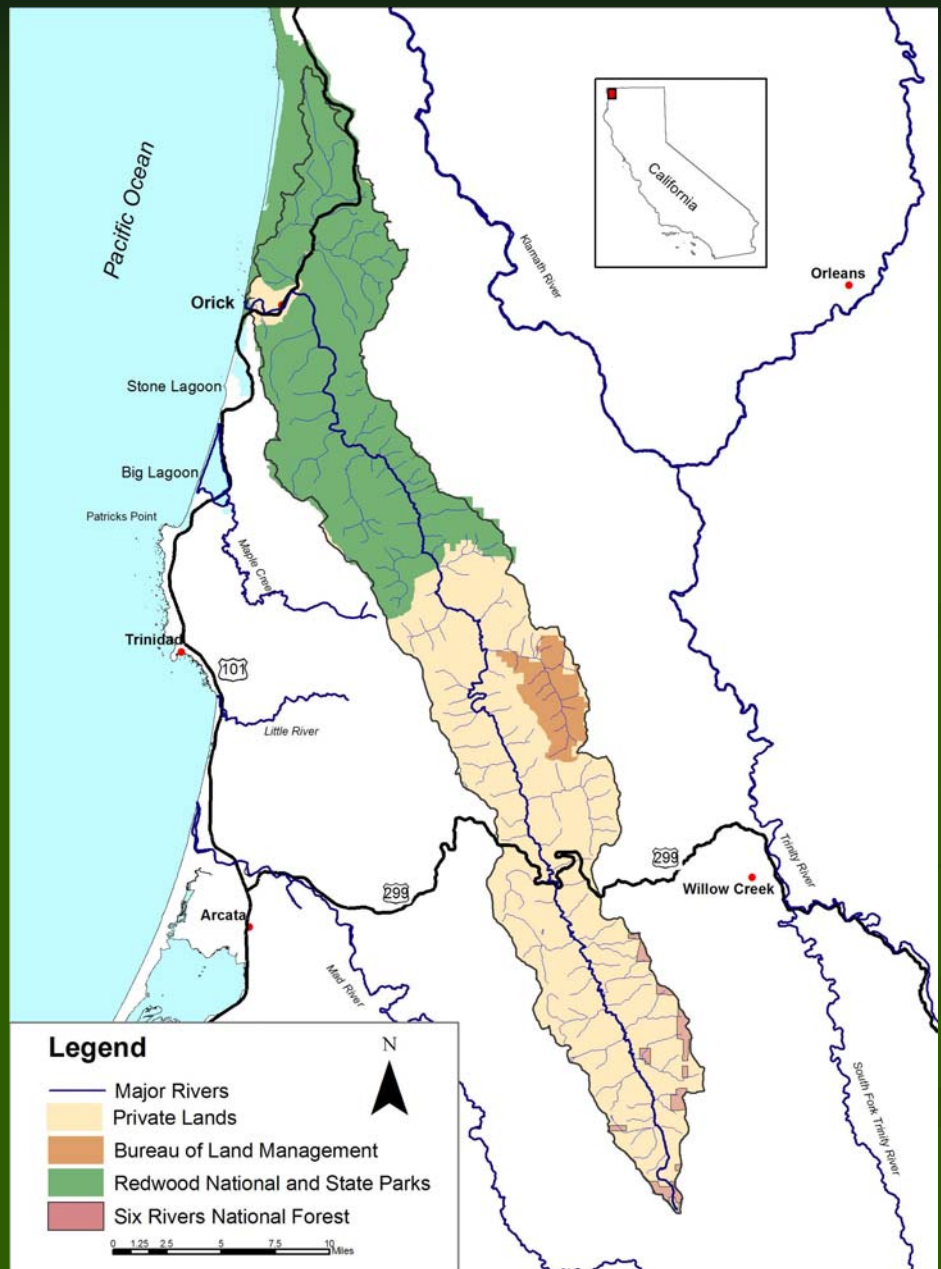


1968 Authorized Boundary

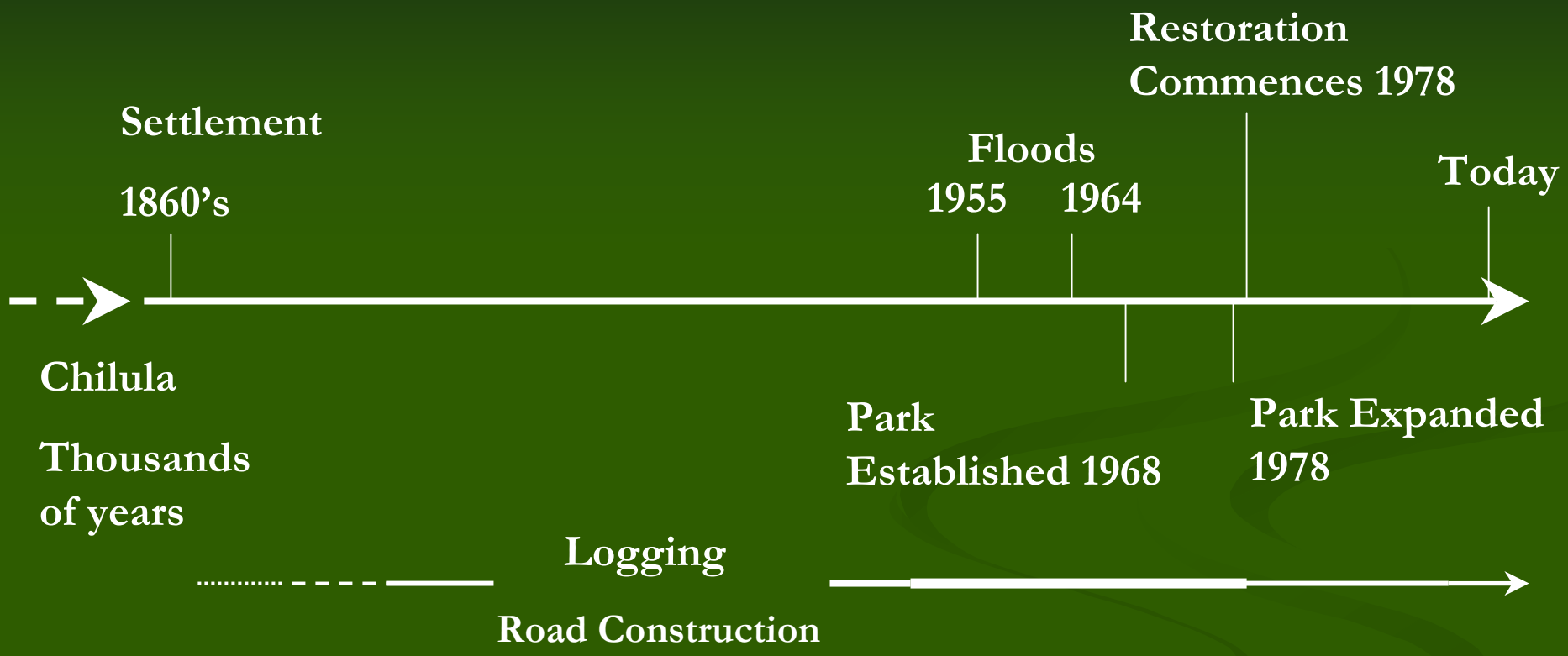
1978 Expansion

Private lands

Generalized Ownership



Watershed History - Timeline



Watershed Restoration Journey

- **Watershed Assessment**
- Goals & Objectives
- Implementation
- Measure effectiveness (monitoring)
- Lessons learned and next steps

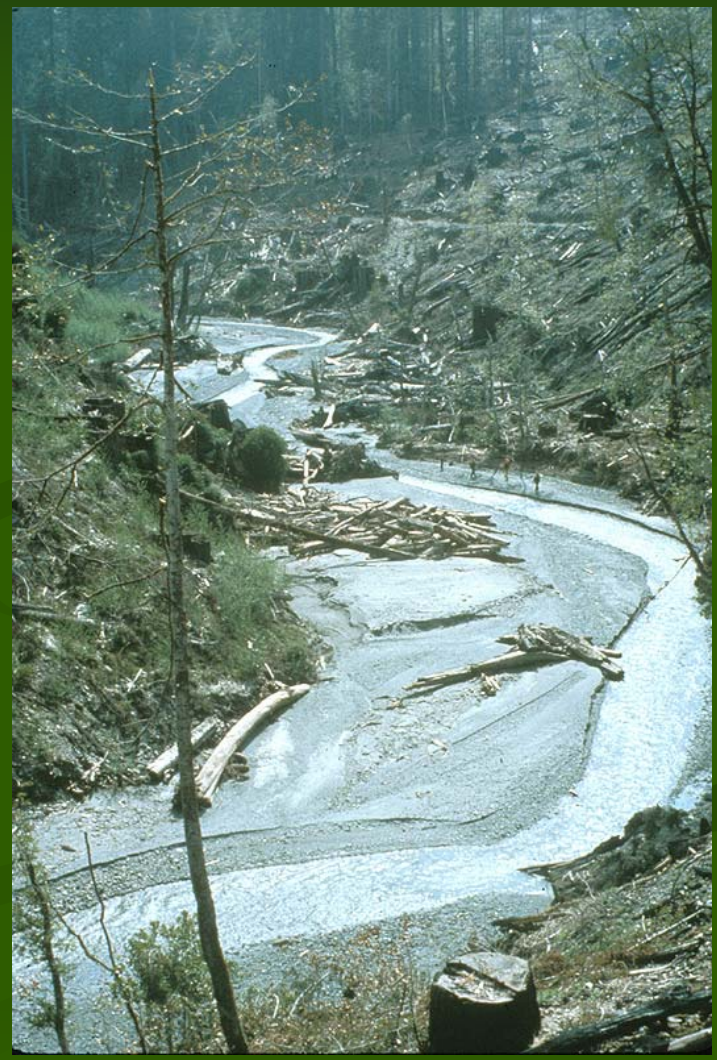
Watershed Assessments

- Sediment Sources
- Road Assessments
- Forest Health
- Estuary Function
- Fisheries
- TMDL

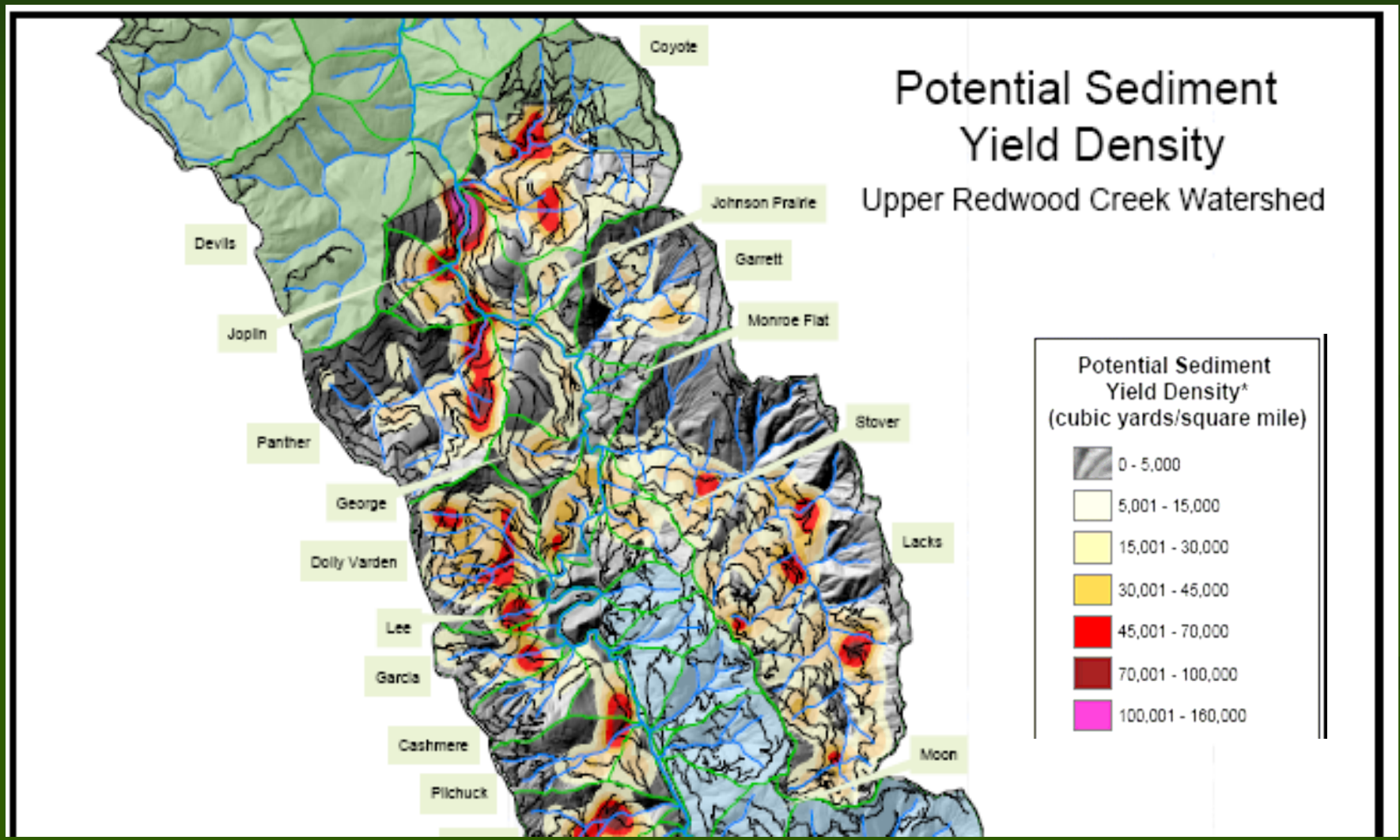
Focused

- Watershed Analysis
- NCWAP
- Integrated Watershed Strategy

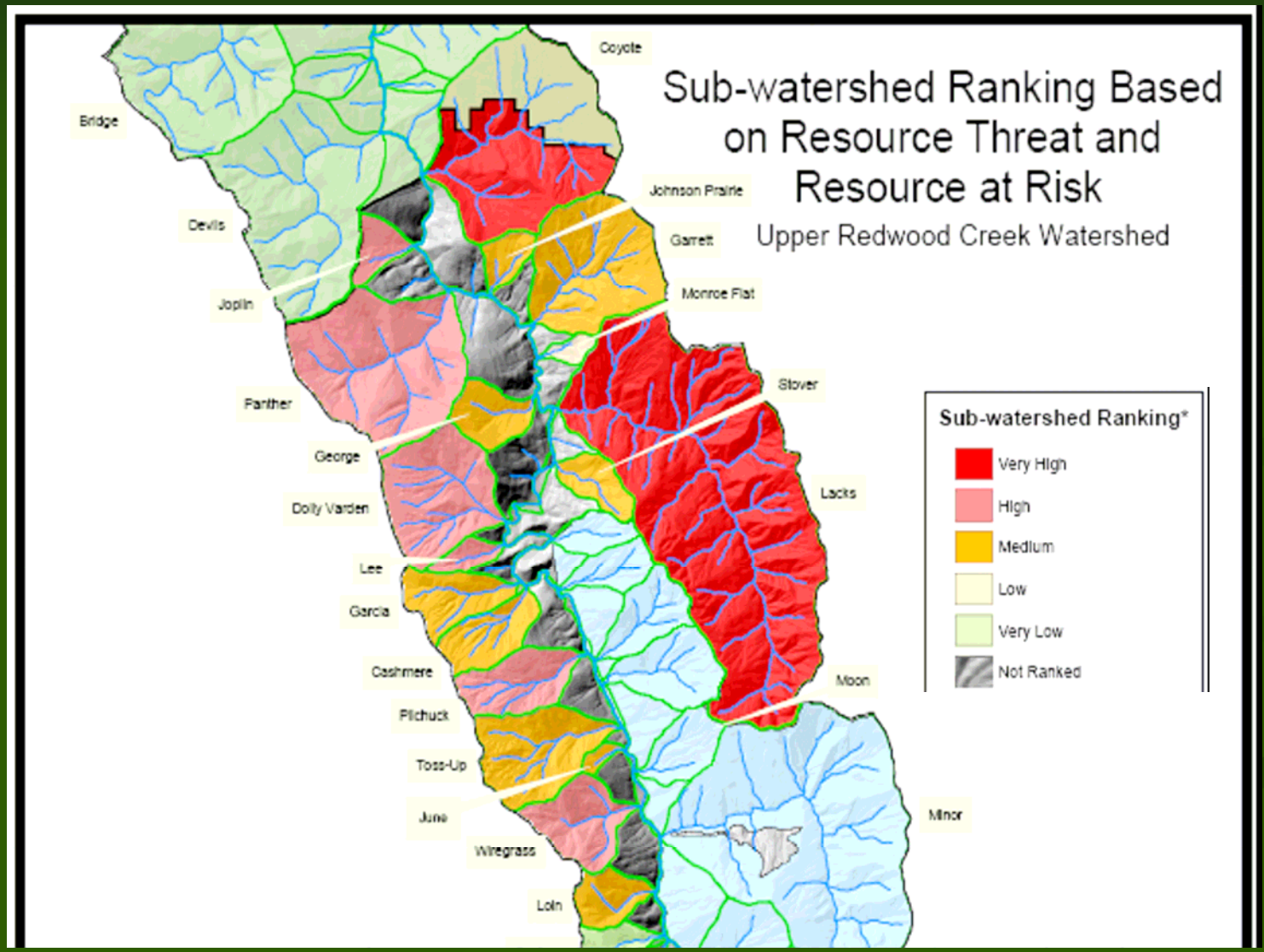
Integrated



Road Assessments – One type of analysis



Road Assessments – A second type of analysis



Other Assessments

- Forest Health (second growth management)
- Riparian Condition
- Estuary Function
- Others . .

Assessment – Lessons Learned

- Need a balance of focus and integrated
- Focused – need consistent methodology
  - i.e. road inventories (avoid apples vs. oranges)
- Integrated – Need interdisciplinary involvement
  - Identify key questions…
- Prioritize
- Need to adapt – conditions change

Watershed Restoration Journey

- Watershed Assessment
- **Goals & Objectives**
- Implementation - Progress to date
- Measure effectiveness (monitoring)
- Lessons learned and next steps

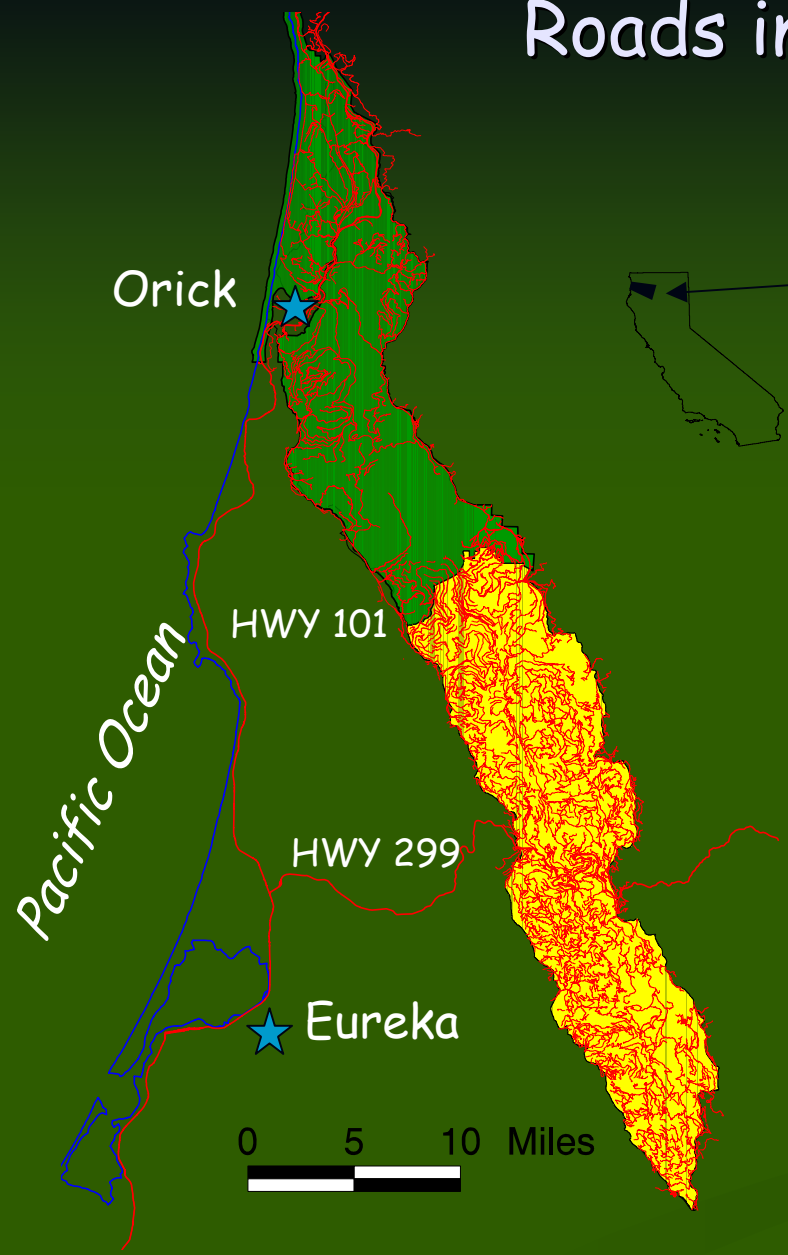
Watershed Restoration Goals

- National Park Goals
  - Establishment legislation
  - Expansion legislation
- Other Stakeholder Restoration Goals
  - TMDL
  - Fish and Game
  - Orick community – ground water quality

Watershed Restoration Journey

- Watershed Assessment
- Goals & Objectives
- **Implementation**
- Measure effectiveness (monitoring)
- Lessons learned and next steps

Roads in the Redwood Creek Basin



Project Area

Redwood National and State Parks

Private lands

Watershed Restoration Implementation in Redwood Creek Watershed

- Estuary Restoration
- Riparian Condition
- Forest Health (Second Growth Management)
- Two programs for Erosion Control
  - Park
  - Upper watershed

Status of Park Lands Restoration

- Of the 430 miles of roads at the time of Park expansion in 1978,
  - 230 miles have been treated
  - 125 miles remain to be treated
  - 75 miles will be retained
- Issues:
  - Concentrate or disperse treatment areas
  - Short-term effects on T&E Species

Status of Upper Watershed Erosion Control

- Cooperation established
  - Between Park and 7 private landowners
- Road Assessments completed on 90% of area
- Priority areas for treatments identified
- Projects being implemented annually since 2000 with Salmon Restoration Grants
- Programmatic funding is being sought

Watershed Restoration Journey

- Watershed Assessment
- Goals & Objectives
- Implementation - Progress to date
- **Measure effectiveness (monitoring)**
- Lessons learned and next steps

Measuring Effectiveness or Program Evaluation

- Project level
  - Photopoints, erosion voids, turbidity upstream/downstream of project site
    - Direct feedback
- Subwatershed level
  - Subwatershed comparisons of turbidity and biota
    - Cumulative effects

Measuring Effectiveness or Program Evaluation

- Watershed-wide – long term data
  - Mainstem stream gaging sites – suspended load
  - Mainstem cross-sections and longitudinal profile since 1974
- Fish inventories –
  - Summer steelhead population
  - Estuary populations
  - Downstream migrant trapping – began in 2003

Measuring Effectiveness – Lessons Learned

- Monitor multiple indicators at multiple scales
- Use consistent comparable methods across the watershed and through time

Watershed Restoration Journey

- Watershed Assessment
- Goals & Objectives
- Implementation - Progress to date
- Measure effectiveness (monitoring)
- **Overall Lessons learned and next steps**

Overall Lessons Learned

- Prioritize – restoration funds are limited
  - High quality consistent assessments
- Monitor multiple indicators at multiple scales
  - Short term, project specific
  - Long term, watershed-wide
- Build partnerships
  - National Park, private industrial timberland owners, agencies, local communities

Next Steps

- Continue with existing projects
- Continue with monitoring
- Continue building partnerships
- Integrated Watershed Strategy for Redwood Creek

Integrated Watershed Strategy (IWS) for Redwood Creek

- Cooperative partnership of 14 entities
- IWS Goal :

  to improve and protect water quality, water supply and aquatic habitat throughout the Redwood Creek watershed, including the estuary and coastal areas